

ST REPORT WEEKLY ONLINE MAGAZINE
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EXCLUSIVELY ON:	COMP-U-SERVE	~	GENIE	~	DELPHI
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From the Editor's Desk:

From the various messages recieved on the services and the mail that came via the US Post Office, I would say that Issue # 41 was either strongly liked or disliked..it's a shame when a reporter has to use the shock treatment to get people's attention. Realizing that this practice usually results in a negative reaction, however, sometimes it is needed, if for nothing else than to get the folks more involved .

To those of you who have stated your opinions (pro and con) we thank you for getting involved. To those who felt that Rex Reade should go buy an IBM...well, that is sad, I see Reade as a very strong supporter of the Atari ST and simply pointing out (rather demonstratively) anything he finds that could and does hurt the ST.

The Atari ST is a very powerful and satisfying system and the reason I do not stop the "RAVE-OUTS" is really simple...most of what is pointed out needs to be noticed, stopped or changed. I have no problems with the manner in which Atari conducts it's business but, I know for a fact there are those executives at Atari who are VERY upset with the sloppy information flow from Atari to the media and are furiously making changes to correct these things. It has, in the past, been the bad information from Atari and misinterpretation of poorly structured release statements that have created it's greatest sources of embarrassment.

Again, I must make the stand that we, as a weekly publication, get items

very quickly and usually before the entire story unfolds..therefore at times we will appear to be "out on a limb" concerning certain issues and situations..that being the case, you can always expect a clarification, correction, or in some cases a complete retraction of an article or release if the situation warrants such action.

It seems kind of strange though, that to get any kind of reaction from our readers we must become rather controversial....That is NOT our intent or purpose, nor is it our purpose to be wishy-washy pulp coming out once a week to massage everybody's forehead. We will continue to say it like we see it and respect any and all reader comments. We only hope the big picture in all our minds remains ATARI FOREVER.

This paragraph is last for a very special reason, I waited all week to see what would be said about the situation concerning DELPHI/ANALOG/STLOG and ST REPORT. Below, We list the complaints and our feelings on the matter....

In a nutshell:

- [1] C.Walnum was unhappy about a remark made in ST REPORT CONFIDENTIAL. Seems he felt that the GODZILLA remark was directed at Andy Eddy and not at his hard drive (do it yourself) article. It was aimed at the article.
- [2] C.Walnum states that Charles F. Johnson was upset about a small piece added to ST REPORT about arc 521, he was right and we apologize to CFJ, We hold Charles F. Johnson in the highest esteem and will support him in any way we can.
- [3] C.Walnum states we used a few names in our ART contest that we had no right to use, we left a message in the forum and the reply was from one of the Analog(x) sysops there that they saw no problem with having them as judges...we ran it for 12 weeks before any complaint and therefore we must assume that the objection raised is convenient for the course of current events.
- [4] C.Walnum feels that we owe some Zmag uploads, we NEVER agreed to upload Zmag to Delphi..the agreement was made for ST REPORT only and with Mr. Paul Hodasch and not Walnum.

As stated above this was the last entry into ST Report this edition, therefore, at this time I am pleased to announce that Clayton Walnum and ST REPORT have come to terms and all is well...the entire issue was a small misunderstanding that quickly mushroomed. The matter is settled and it is dead.

Atari United once again!

R.F.MARIANO

PS, Dave Small wrote a terrific article that would indeed fit this magnificent occasion, it's called LIFE GETS STRANGER. It appeared in CURRENT NOTES, June 1988.....

THE JUDGES LIST
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Service	Name
-----	-----
CIS	Ron Luks
CIS	Dan Rhea
CIS	Mike Schoenbach
GEnie	Darlah Hudson
GEnie	Fred Beckman
GEnie	Sandy Wilson

ST-Report Official Contest Rules
=====

No purchase necessary.

Deadline for consideration in this contest is midnight August 31, 1988.

Winners will be announced in ST-Report on September 12, 1988. We guarantee to award all prizes. The prize list will be announced during the contest.

All readers are eligible to enter except employees of APEInc. Publishing, CompuServe, GEnie, The Source, Delphi and their immediate families.

This contest void where prohibited or restricted by law. We are not responsible for lost, mis-marked, or delayed art/work.

All submissions must be drawn with any Atari ST drawing program.

All submissions must be drawn by the original artist. Copyrighted art work will not be accepted.

All submissions become the property of APEInc.

All submissions must be uploaded to specified BBS systems by the deadline date. All systems have time and date stamping capability. Any entry dated after 8/31/88 will be void from the contest.

Art Work Requirements

All art work considered for this contest must be drawn with any Atari ST drawing program.

Any person submitting art work must leave an address, telephone number, and drawing program used.

Artwork must contain the following:

ST-REPORT

The winning entry will be used at a later date for a newsletter or magazine cover.

Where to Send

All art work may be uploaded to the following systems.

Syndicate BBS (201) 968-8148
Bounty ST BBS (904) 786-4176

Entries by mail are also permitted. Be sure to use a 3.5 floppy S/S!
You may send to:

ST-Report Logo Contest
Post Office Box 74
Middlesex, New Jersey 08846-0074

(Please include your name, address and telephone number)

Updates

This contest will update uploading areas every two weeks. Contest rules will not be changed, but judges may be added during the run of the contest.

Current judge listing will be published next week.

This contest commences May 2, 1988 and will end Midnight August 31, 1988.

If you have any questions, Please leave email on the services at the following addresses:

CompuServe: 71777,2140
GEnie : ST-REPORT
: R.KOVACS
The Source: BDG793

Rules and Regulations:

- 1). Use any full color program written exclusively for the ST to draw your own personal design of an ST-Report logo.
- 2). Art work ported over from any other computer is void.
- 3). No X-rated art work will be accepted.
- 4). Winners will be announced by mail, email, phone call or equivalent on or before September 12, 1988.
- 5). Judges decisions are final.

:HOW TO GET YOUR OWN GENIE ACCOUNT:

To sign up for GEnie service: Call: (with modem) 800-638-8369.

Upon connection type HHH (RETURN after that).
Wait for the U#= prompt.
Type XJM11877, GEnie and hit RETURN.
The system will prompt you for your information.

AS THE MODEM TRIPS
=====

An Online Soap Opera

When an Editor of a hard copy magazine is the sysop of an online service, this person must be able to distinguish the fine line between his absolute powers as an editor and his duties as a sysop. If he cannot, then there is a true conflict of interest. Included in this article you will see his reasons for alienating the staff of ST REPORT.

NOTE: By the time this is in release, I am sure it will be resolved...Ed.

#4 27-JUN-1988 18:43:29

MAIL

From: BOS1A::ANALOG4
To: BOS1A::REXREADE
Subj: RE: F flag removed: REXREADE

The flag has been removed for a number of reasons, but mostly because of all the complaints we've received about your public name calling, snide remarks, use of other people's material in your magazine without permission and generally unprofessional behavior. A person is given a free flag so that he can generate more interest on the system, not so that he can alienate the people who are already there. I also cancelled RONKOVACS's free flag. I've asked him several times about why Zmag hasn't been uploaded, and nothing has ever been done. All he seems to do is hang around.

Clayton Walnum

3550 27-JUN 19:33 ST Report

CENSORSHIP

From: REXREADE To: ALL

We have as of this day, requested that all files and all materials be removed from Delphi. The acts of the Analog sysop cannot and will not be tolerated...you will, in our next issue see the nasty - gram he sent us attempting to control what we have in ST REPORT and in the Delphi Forum, NOT HE....NOR ANYONE can stop the truth....we report the situations as they occurtherefore, sometimes they are not exactly what people want to hear/see.... We at ST Report certainly enjoyed the company of the fine folks here and believe me, your interesting and sometimes humorous messages will be missed.. alas, thats life....

28-JUN 14:20 ST Report

RE: CENSORSHIP

From: NEILHARRIS To: REXREADE

I think it's a shame that ST REPORT is over reacting this way.

ST REPORT, by collecting information from online services and redistributing it to many users who otherwise could not access it, provides a service that users appreciate.

With more seasoning, it's likely that the journalistic quality of the

pieces written by the ST REPORT staff will improve. Checking sources and verifying information is difficult and time consuming but ultimately rewarding. Being overly sensational by creating controversies is easy but cheap.

I hope this whole incident calms down. Rex should take a deep breath and think about exactly what message the sysops here were trying to send -- name calling on the bulletin board is not reasonable behavior, especially for a guest.

As for my personal reaction to the coverage of my talk -- well, as a convenient target, it just goes with the territory. The Atari user community can judge for itself.

--->Neil

= * =

Neil, It appears that "cheap" shots are in vogue. As far as sitting in judgement on the statements made, You are right, it does go with the territory, for both you and ST REPORT and the bottom line is really quite simple, it is to make sure the user, (the consumer), gets the real story no matter who or what finds points of dissatisfaction. In our eyes, the user comes FIRST. We have no axe to grind other than to dramatically bring out the need for much tighter and clearly more carefully thought out release statements and comments about ATARI and/or it's equipment.

Surely WE must agree, that ST REPORT, on the average brings the news to the user the fastest and have been pretty much in tune despite this fast moving world of computers...we will, however, NEVER sugar coat or gloss over any item found needing the users attention.

As far as checking out an article before it is written, the best we can do in most cases is verify the source and then relate the facts as seen. It is also the responsibility of those individuals who are directly responsible for those ORIGINAL articles to make sure they are sincere in the information contained and the information is the most up to date and accurate available. Seemingly, coin flip statements are, in our opinion the most damaging to both the Atari Userbase and Atari Corp.

As for name calling...Some folks call others names in the form of cartoons..ie: the Editorial page of every newspaper around the world. Since we use no cartoons we are left with only the ability to use verbage of association to "draw a colorful" depiction of a person, entity or situation. The Dagwood thingy was meant as good humor.....in the same vein we find it amusing that there are those calling us raving fools, but saying they agree with what we say or those who call us "The Inquirer" etc...and still read every issue. WHY? We feel it's because we are NOT afraid to take any issue head on. We owe no allegiance, have no IOUs and are sincerly dedicated to the USER, not the sellers, not the developers and not Atari Corp.

It is a sorry state of affairs when WE ALL begin to take ourselves far too seriously...for Life is much too short!

T."Rex" Reade

HARD DISK FACTS AND FIGURES

=====

ST REPORT update and reprint from issue #32

To begin, 99% of all hard disks are made to conform to IBM standards. With this thought in mind we shall proceed.....

The most readily available and in my opinion, the most reliable hard disk is from Seagate.....next in line is the Miniscribe. There are others but you must make sure they conform to the IBM standard.

IBM STANDARD: ST-506/ST-412

Most commonly found hard drives do not have controllers built in. These are the most reliable and economical drives to use.

WHAT IS THE CONTROLLER???

=====

This goodie is the custodian of your hard disk! It directs all I/O functions to the hard disk and it points to and accesses each cylinder. It "controls" everything.

FACTS FOR REFERENCE

ST 412 DRIVES WITH MFM ENCODING 5.0 MEGABITS/SEC.

DATA	ST 125	ST138	ST225	ST251	ST251-1
SIZE f'm'd	21	32	21	42	42
# HEADS	4	6	4	6	6
CYL's	615	615	615	820	820
STEP RATE uS	3-200	3-200	5-200	3-200	3-200
AC'S TIME mSEC	28	28	65	40	28
WRITE PRE'C	N/A	N/A	300/614	N/A	N/A
POWER watts	10	10	14.8	11	12

	ST4038	ST4051	ST4053	ST4096
SIZE f'm'd	31	42	44	80
# HEADS	5	5	5	9
CYL'S	733	977	1024	1024
STEP RATE uS	10-70	10-70	3-70	3-70
AC'S TIME mSEC	40	40	28	28
WRITE PRE'C	300-732	N/A	N/A	N/A
POWER watts	25.5	25.5	23	25.5

ST 412 INTERFACE DRIVES WITH RLL ENCODING 7.5 MEGABITS/SEC

DATA	ST138R	ST157R	ST238R	ST251R	ST277R	ST4141R
SIZE f'm't	32	49	31	43	65	122
# HEADS	4	6	4	4	6	9
CYL'S	615	615	615	820	820	1024
STEP RATE uS	3-200	3-200	5-200	3-200	3-200	3-70
AC'S TIME mSEC	28	28	65	40	40	28
WRITE PRE'C	N/A	N/A	N/A	N/A	N/A	N/A
POWER watts	10	10	14.8	11	11	25.5

SCSI INTERFACE (EMBEDDED CONTROLLER) HARD DISKS

DATA	ST138N	ST157N	ST225N	ST251N	ST227N
SIZE f'm't	32	48	21	43	64
SECTORS	63,139	95,015	41,170	84,254	126,790
ACCESS TIME	28	28	65	40	40
POWER watts	12	12	16.8	13	13

Be Advised, as of 01/01/88, Seagate began using the new I'ntl light code, the front light on the drive is GREEN ONLY if it is made after Jan.01 1988. If you purchase one and the light on the front is red, it's either old inventory, used or rebuilt. I do not advise the use of the "N" type H/D, they're limited in their flexibility of use by the embedded controller and are more expensive. Seagate may cost more, but they are the workhorses of the industry. The Seagate Hard Disk is extremely RELIABLE. Seagate units 40mb, and above, have auto-park.

All of the above are:FCC,TUV/UL/CSA [CERTIFIED]

The list of other types of drives is large, some are, Disctron, Lapine, Microscience, Micro-memories, Miniscribe, Priam, Rodime, Shugart, Tandon and Tulin. The formatted size of these range anywhere from 5-???Mb.

I purposely avoided Brand Names of packaged drives because in most cases they use Adaptek and Seagate or Miniscribe...I have found that Atari and Supra have gone to the 3.5 hard disk. I will cover those next time. As far as Atari is concerned, they would have saved a fortune in R&D if they had used the standard assembly, as the method they used is so typical of Atari, "they walked all 'round the barn to walk in the front door", why did they have to change the 'prom, it made the SH204 a problem maker, why the dip switches?,,do they really think the Atari user cant handle Terminal resistor packs and jumpers??? Bad Move! Some of the companies have gone to Miniscribe, (the coffee grinder) to cut production costs, they will go back to SEAGATE as soon as they realize the RMA numbers are eating their lunch!

Remember that all these drives (except for a few) come without a controller, you really want it without a controller..it's less expensive and works out much better for you in the long run.....you will see!

The actual chain of connection for a hard drive is:

- 1-hard disk
- 2-controller
- 3-interface..and the DMA port.

MFM- This is a format style most commonly found in use although recently, RLL has been becoming far more popular as it is a condensed compact format thus allowing more data to be stored on an equivalent size hard disk. The major difference is the media itself in the hard disk is PLATED to insure accuracy and longevity. Think of it like plain recording tape and CrO2 Chromium Dioxide tape. The recording media in the "R" drives (Seagate) is of a high quality and plated.

In most cases, the Interface, (Host Adapter) determines what type of system the hard disk will comply with. It also (usually) has a clock/calendar built in.

In reality you can take a hard drive system made for an 8bit XL/XE and

change the interface to one for an ST and it will now work on the ST
(after a format).

The two most widely used controllers, and I might add, ARE REALLY THE
BEST, are made by Adaptek they are designed with the user in mind and
provide for expansion for the future.

ADAPTEK 4000 SERIES CONTROLLERS

ACB-4000A

ACB-4070

Interface SCSI dr type ST506/412 ST506/412 [RLL-Certified]

These hard disk systems are special in one way, they have embedded
controllers.

IOMEGA

ALPHA 10H

BETA XXX interface

SCSI dr type Cart 10mb

Cart xxmb

RODIME

R0650

R0652 interface

SCSI dr type 10mb

20mb

SEAGATE

ST225N interface SCSI dr type 20mb

ST277N interface SCSI dr type 63mb

*** NOTE Iomega, Rodime, and the 2 Seagates, see listing above, listed are
the embedded controller type. These are slowly fading from popularity.

WESTERN DIGITAL

WD1002-SHD interface SASI dr type ST506/412

XEBEC

1410

1410A interface

SASI dr type ST506/412

ST506/412

* These devices are SASI and are slowly fading into the sunset.....

ADAPTEK CONTROLLERS

=====

ACB4000A / ACB4070 are highly recommended and of excellent design. These
controllers will handle most any application.

HARD DISK INTERFACE

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There are three types available for the ST: ICD, Supra, and Berkley

ICD

The "MIO"...Designed for use in the 8 bit field comes in two
configurations ...

256k

1MB

Both units handle all your needs as they include all the functions of the Atari 850 interface. PLUS a printer spooler and buffer.

THE ICD ST HOST ADAPTER INTERFACE
=====

The Host Adapter is designed for the 16 bit ST hard drive system or for most anything you care to couple to it...ie, tape backup and hard disk and laser printer etc..

The host adapter interface is also equipped with an outstanding clock made non-volatile thru the use of a lithium battery. Rated **** ICD has real winner here!

SUPRA

Both of supra's interfaces are quite good, not as flexible as ICD's but good.

BE ADVISED! SUPRA IS SLOWLY DROPPING THE 8 BIT HARD DISK SYSTEMS.

This is the end of the first installment to placed here for you, there will be more in the near future.

The configurations for the hard disk systems are variable, for example, if you wished to use the stand alone system with a different computer you would be able to do so simply by changing the interface.

Expandable means you can add another drive at a later date in the existing cabinet without major circuitry changes. The proper cabinets are those made for the IBM twin half height disk drives. They take up less of a footprint than the SH204 and have a 60watt switching power supply and blower included in the cost. Also included in the price is a blank panel for the empty drive space if you are using only 1 half height drive to start with. The cabinet fits like a glove.

All Information provided by:

ABCO COMPUTER ELECTRONICS INC.
P.O. BOX 6672
JACKSONVILLE, FLA. 32236
904-783-3319

20mb 569.00 ~ 30mb 649.00 ~ 40mb 769.00 ~ 60mb 949.00

all the units mentioned here are expandable

NOTE: This article and the "Hard Disk Series" are for the readers of ST REPORT MAGAZINE and may not be duplicated in any form without the written permission of the author.

ST XFORMER II
=====

by Darek Mihocka

ST Xformer II is a software emulator of the 6502 microprocessor. On a standard ST, running on a 68000 at 8 MHz, it executes roughly 80,000 to 100,000 instructions per second, or about 40% the speed of a 6502 machine. It hasn't been tested on any of the accelerator boards now out for the ST.

In addition to the 6502 emulation, 3 hardware emulation modes are available: Atari 800/XL/XE, Apple][, and Commodore 64. NOTE: in this release only the Atari emulation can be accessed. Each of the hardware emulation modes is explained later.

ST Xformer II is GEM based, and runs on any color or monochrome ST system with at least 1 Megabyte of memory. It runs off floppy or the hard disk. It must be booted in either medium (80 column color) or high monochrome) resolution.

If the program runs out of memory (800K is required) or it is booted in low resolution, an error message appears and the program exists. Therefore, if you only have a 1 Meg machine, make sure all memory intensive desk accessories and AUTO boot programs are disabled.

Xformer works on 1040 ROMs, Mega ROMs, and the "new" ROMs.

Online help can be accessed from the menu bar under the "Help" entry. It very briefly summarizes the most common procedures.

Atari 800 support now includes DOS and non-DOS disk support, Player Missile Graphics, emulation of most of the NMI and IRQ interrupts, and emulation of most of the ANTIC, POKEY, and GTIA hardware registers. This release has 2 promised features missing (hey, this program took a _lot_ longer to write than planned): display list interrupt support, and XL/XE bank select memory emulation. Other less serious cosmetic problems are the lack of GTIA support. I simply ran out of colors registers on the ST. These bugs, and any others reported by users will be fixed and available on the update disk for registered users.

Xformer II represents over 6 months of effort on my part to take the various Xformer 1.x versions and join them into one unit. Thus, Xformer II replaces the Xformer 1.1 and 1.2 Atari 800 emulators, and the Xformer 1.0x Apple][emulator, which never really got released.

The user interface is totally redesigned. Instead of a text based keyboard entry style interface, Xformer II uses GEM for most of its functions. This greatly improves usability, which was one major complaint of the previous emulators.

Xformer II also runs twice as fast as the previous versions. The 6502 emulator was rewritten to use a different p-code interpreter algorithm, and all the assembly code was tightened up even more.

Xformer II does away with all the extra files that were required for use with previous versions. The Atari ROMs are stored in STXFII.PRG itself, and DOS emulation is handled differently, as explained in the Atari section.

There is a section in Xformer II called "Scratch 'n Sniff". This is a billboard on which Atari related products or services can be advertised. It is still not too late to place your ad. I charge reasonable rates. Ask the current bunch of paid advertisers!

Also, any sysops of Atari ST bulletin boards who would like to advertise their BBSs should send me a letter with the important info. Again, reasonable rates will be charged.

User groups wishing to advertise themselves should send me their 3 most recent newsletters and their ad. No charge.

Anyone who gets a chance to try Xformer II on any of the 14 or 16 MHz accelerator boards, please let me know if it runs, and if so, how much faster.

I have to acknowledge some of the people whose ideas made Xformer II a reality. First there's Charles Smeton, who soon after the release of Xformer 1.1 pointed out to me on GENIE a code optimization that I now use in Xformer II. Just before that, David Small, at a show in Toronto, scribbled down his ideas on speeding up Xformer which later turned out to be the foundation of Xformer II. Actually, Jan Grey, fellow University of Waterloo student, ST owner, and Microsoft employee, had the same idea about 6 months earlier, but (sorry Jan) I thought he was kidding when showed me the code! Fortunately after I refined David's idea into real code, Jan came up with the ultimate speed hack. And of course, there's Bill Teal, who's trying to do the same thing I am but for a different CPU (and doing it better!), who pointed out a few things I could do, and did, to make Xformer II faster. The final result, as you already know, was a 100% increase in speed over the previous Xformers.

Also, in the works: ST Xformer III 6502 emulator and compiler. Does all the things this one can with one small difference. Programs are first compiled into native 68000 code, then executed. This should allow most Atari 800 programs to run at least 2 or 3 times their normal speed!

Finally, I'd just like to remind everyone once again that the ST Xformer II is a shareware product. It is not public domain. Therefore, if you use it, please pay for it. Out of the \$15 you send, almost half of that will go back to you in the form of the documentation, update info, and of course, postage. I think I'm making a very fair deal here, so let's see shareware work. I don't want to become another one of the already too large group of ST programmers who put out a shareware product, only to see it be used by everyone and paid for by no one.

BIX, DELPHI, GENIE: DAREKM Compuserve: 73657,2714
Xformer Hotline: (519)-747-0386

Send your registration Fee (\$15 US or \$20 Canadian) to:
310-D Bluevale St. N., Waterloo, Ontario, CANADA N2J 4G3

ST REPORT CONFIDENTIAL
=====

MEA CULPA: John Skruch is still with Atari ...Our error, we humbly
----- apologize to John....and Atari.

Houston, Tx. Looks more and more like this is the area Atari's "NEW"
----- Factory will appear....

C.I.S. John Townsend has stolen the show! He may well be the

----- "most liked" Atari spokesman so far...."technically speaking"....

LAS VEGAS Atari will debut it's biggest "SHOWING" yet. Look for a
----- host of marvelous surprises at The "Vegas Comdex Show of Shows!" Remember we told you awhile back about the ATARI ST portable laptop being shown here?

Psssst?? Who said, A "certain" hard copy mag looked like somebody
----- went "psycho" with the fonts in a DTP, Tim O'Leary??

The Shuffle More changes at Atari? You bet! Can't say yet, but it
----- promises to be a BIG improvement across the boards.

SUNNYVALE, CA ATARI now has a man at the Helm who can get the job done.
----- CONGRATULATIONS TO: A. LIGOURI...You have Our Best Wishes and support.

60mb Hards By the year's end, most ST hard drive users will be looking
----- to upgrade or will already have 60mb hard drives...

ADAPTEK NEWS 4070 Controllers are in short supply, seems this device can
----- make a "miracle"...The shoe horn effect.....

MAIL ORDER Never have so few done so much to injure so many in the
----- Atari Dealership world....we doubt you will EVER see ATARI in mail order houses again...they are merely selling off existing inventory and WILL become HISTORY.

SUNNYVALE, CA A 68000 "GAME MACHINE" is in the works..Atari will "try" to
----- make sure it is not associated with the ST line...

FOR XMAS? A Transputer in every stocking? Looking good ATARI!....

CD - ROM By Christmas, There will be a very comfortable price tag on
----- these babies...next, affordable Read & Write CD-ROM.

THE BEAT GOES ON
=====

by T."Rex" Reade

In all fairness to Neil Harris, we have gathered the following information about the BYTE July issue and here is a synopsis of those facts.....

First, the actual article in question...which, by the way, was on page 11 of the July '88 issue of Byte

Despite being recognized as technologically impressive personal computers, Atari's ST and COMmodore's Amiga haven't had the kind of market success enjoyed by machines from IBM et al. and Apple. SO what's
* the problem? Part of the problem is that "computers are not powerful neough to be used at home for anything productive," says Neil Harris, director of product marketing at Atari. "I think the ST and the Amiga are in the right direction, but we're still not there yet." Harris also

blames the industry press for not covering the Atari machines enough. "The computer press is too busy analyzing its readership," he says. He also cites less malevolent forces, such as the RAM shortage. As for Atari's success in Europe, as opposed to the US.: "MS-DOS wasn't
* entrenched overseas, and there's much less disposable income there, so when a lower-cost alternative was introduced, it was embraced" by the Europeans.

27-JUN 15:13
RE: Nanobyte Nybble
From: NEILHARRIS

Looks like a controversy developing here. It would be nice if people went back to the original discussion (available on cassette tape from the Interface Group -- panel SOP-4, "Alternate Systems in Niche Markets: Amigas and Ataris", from Comdex/Spring '88).

NOTE:The occasion was not Comdex 88, it was the West Coast Computer Faire. Ed.

I was discussing possible future advances in technology that would aid development of computers in the home. The typical use for computers in the home, according to the 1980 point of view, would be household management -- checkbooks, budgeting, household finance. Why has that not happened, while businesses large and small have plunged into computing? I think the answer is labor, and technology.

The business environment has a pool of labor that can take on the huge task of computerizing the records of the business. At home, there is no such thing. You'd have to do it yourself. The job is too big, and too dull, for most of us.

Imagine a low-cost scanner, with the ability to recognize characters written on paper. Imagine software which could decipher the characters into something meaningful and place the information into a database. That sort of development is quite possible for the next few years. And it is that sort of technology that is needed to make widespread home computing happen. Other technologies were discussed in the panel as well.

The point of the whole thing is to examine why we have not seen the home computer become as widespread as the telephone (today there are about 15 million computers in the home, mostly being used for work-at-home, entertainment, and computer hobbies, not for "home computing" to assist the home).

The office does not need as powerful a computer as the home. Because the business can afford to hire people for labor - intensive tasks, and the home cannot.

- * -

Now, we have both sides of the issue here, and there are those who feel I was overly exhuberant in the manner in which the article in Issue 41 was written, thats me, take it or leave it ..at least, I will not attempt to minimize everything and represent this publication and myself as a wimpy, afraid to say it like it is, push-over.

Since I receive NO pay for this effort, I find it very easy to say it like I see it. It has been said that this may be the reason some care and others worry about a meal ticket, I care and, therefore, really will

say it in a manner that will have the most impact and perhaps bring about change. The main thing is to get the normally complacent readership involved in the future of the machine WE ALL ARE SO WILLING TO DEFEND.

I am very much aware that this world of ours is full of opinions, some good and some bad. We feel if ST REPORT hadn't taken issue with this BYTE release it probably would have gone relatively unheard of until some time in the future when it would come back to haunt all of us at a critical moment.

Still, in reading the above reply from Mr. Harris, it seems that his facts are based on a * 1980 * study of a concept about computing that will NEVER fully come about because the speed of the acceptance of computers in the home has far surpassed any idea a 1980 study could arrive at. The statement in BYTE said, the computers were not powerful enough to do anything productive in the home..Neil, YOU said this, not BYTE, and WE feel you owe us a real, in depth, explanation showing why you would even consider saying this at the same time ATARI is promoting it's MEGA ST SERIES AND LASER PRINTER....it looks like the statement was made to make sure the sales in the US stay low and we know you would not do this, but to outside observers it appears this way....

Then, as if almost on cue, you say the office does not need as powerful a computer as the home...are you really serious? The computer was and is intended to relieve and free the "human" from labor intensive tasks and reduce overall labor costs ..not increase them as you infer in the latest of your statements, by saying the business can afford to hire more people and the home cannot. You forgot one MAJOR factor, you seem to be relying on facts from 1980, this is 1988-89 almost 1990...the Cottage Computer Industry is well on it's way to becoming a very strong factor in the entire computing scene, yet you comfortably neglect it completely..

EXAMPLE: Some of the very best programs...Public Domain and Shareware are completely concieved, written and produced at home. Condemn this reporter if you will folksbut believe me, I am saying it like it is, bitter pill or not, this is not sensationalism or YELLOW Journalism at all. We feel it is hard hitting, to the point reporting that has, for the most part, been totally missing from our area of computing.

In addition, we must all realize that when a magazine such as BYTE or any other magazine publishes an article, most folks read it and put the thing down remembering only a few key points. In the Byte article, I am sure you agree the points that will be remembered are obvious, that both the Atari and Amiga are unacceptable....We know this is totally incorrect but will the casual reader or the reader who bought a half dozen different magazines to see which computer(s) were popular and suitable for himself?

In rethinking this matter, We will stand firm ...we are correct in making a loud noise on this issue and will do so in the future if we find, in our opinion, that Atari and/or one of it's people are being brought to task unfairly or that a statement, decision or press release is made pertaining to the Atari Userbase that we feel is not in the best interests of all Atarians.

= * =

Bringing back an Item for further discussion and clarification:

DISPOSABLE INCOME = Spendable Monies

What do you mean the "DISPOSABLE INCOME" is lower in Europe?

Does that mean they have less money to spend?

If it's higher here (Disposable Income)....why are you TOUTING EUROPE?

PURE DOUBLE TALK AT IT'S SCIENTIFIC BEST!

->Atari sells better in Europe!<-

Because, Europeans have LESS money to spend than the Citizens of the USA.

This explanation is "confusing at best" it really does not COMPUTE.

As for the USA, the best way to put this is to say "The Market is Ready". So far, almost anyone I have shown my equipment, wanted more information and, usually within 15 to 30 days became an owner of an ST. The initial reaction is always...."DID THEY JUST COME OUT WITH THIS?"

Try the good Ole' USA you'll like the reception you will get. They have more Disposable Income here and therefore they will purchase a more costly block of equipment at one time, ie: 1040/Hard Disk, mega/laser, ST/laser hard disk. The entire thing about spendable monies is really sad, a good product and good advertising will overcome any ivy league euphanism or yuppie conception of what a computer should be. The American purchasing public is quite sophisticated, even tho there are those who would refute this, give 'em a chance, SHOW the product in national ads, the US Market will respond very positively.... give Winston and Winston a chance..the real kneejerk shots come from the backdoor of Atari. Ask Atari's P.R. and advertising firms....

Atari IS my computer by choice and it will remain that way, despite the wishes of those who disagree with this reporter, I will not go the route of "ignore it, it will blow over". I will pursue the rightful place for the ST in both the business, cottage computer industry and home cpu marketplace.

Rex.....

A CLOSER LOOK

=====

With WORD PERFECT, do We have the POWER of the MS DOS World?

by Earl Moore 73637,1757

"Personal Computing" ran test of the select word processors for MS DOS machines in their June 1988 issue. As a fairly new owner of "Word Perfect" for the ST I was naturally curious as to how the Atari version would stack up to their test. "Personal Computing" described their test in some detail so I made a honest effort to recreate them for Atari WP. What follows are my results, but first I want to establish some background:

* Tests by "Personal Computing" were conducted on an 80286-based Epson Equity III+ running MS-DOS 3.2, equipped with an EGA display and an NEC MultiSync II monitor using a 40MB hard disk.

- * My tests were run on an Atari 520ST with 2.5 MEGS of memory using a ICD FAST 20MB hard disk and color SC1224 monitor;
- * I followed the test in "Personal Computing" as closely as possibly. However, there is always room for error;
- * I conducted each test at least four times and then averaged the resulting times;

Even through comparing results from Word Perfect on the ST to word processor results conducted on an MS DOS 286 is like comparing apples to oranges, I feel it is an interesting comparison. Power wise the ST and the 286 match up as well as any. It also gives a feel as to how well Word Perfect made the jump to the ST and GEM. (Perhaps not as well as one would hope). Word Perfect seem to suffer the most in those areas that relied on GEM/TOS...(a short coming of GEM/TOS not Word Perfect??)

Word Processors tested by "Personal Computing" included:

- DisplayWrite 4
- Manuscript 2.0
- Word 4.0
- Multimate Advantage II
- Professional Write 2.0
- Q&A Write
- WordPerfect 4.2
- WordStar Professional 5.0
- XyWrite III Plus

** Results of MS DOS Word Processor test Copyrighted "Personal **
Computing."

TEST RESULTS

Test 1 - LOAD PROGRAM - measure the time it takes to get the program from disk to ram.

Atari WP	(last)	:*****	12.2
		:	
DisplayWrite		:=====	7.1
Manuscript		:=====	7.5
Word		:=====	3.4
Multimate Advantage		:=====	4.4
Professional Write		:=====	2.9
Q&A Write		:=====	3.4
WordPerfect		:=====	2.1
WordStar Professional		:=====	4.5
XyWrite III Plus		:=====	6.2
		:-----:-----:-----:-----:-----:-----:	
	secs		2 4 6 8 10 12 14

TEST 2. LOAD DOCUMENT - measure the time it takes to load a 10K document.

Atari WP	(7th)	:*****	1.4
		:	
DisplayWrite		:=====	2.2
Manuscript		:=====	1.8
Word		:=====	.8

Multimate Advantage	:=====	1.0								
Professional Write	:=====	1.4								
Q&A Write	:=====	.6								
WordPerfect	:=====	.6								
WordStar Professional	:=====	.7								
XyWrite III Plus	:=====	.6								
	:-----:									
secs			.5	1.0	1.5	2.0	2.5	3.0		

TEST 3. GO TO END - measure the time to go from the top to the end of a 10 page document using the GO TO END command..

Atari WP	(last)	:*****	3.4							
		:								
DisplayWrite		: Failed								
Manuscript		: = 0.1								
Word		: = 0.1								
Multimate Advantage		: Failed								
Professional Write		: = 0.1								
Q&A Write		: = 0.1								
WordPerfect		:=====	0.6							
WordStar Professional		: = 0.1								
XyWrite III Plus		: = 0.1								
		:-----:								
secs				.5	1.0	1.5	2.0	2.5	3.0	3.5

TEST 4. SCROLL TO END - measure the time to go from the top to the end of a 10 page document using the keys to scroll.

Atari WP	(last)	: *****GOT A CALENDAR*****								
		:								
DisplayWrite		:=====	33.1							
Manuscript		:=====	60.3							
Word		:=====	14.4							
Multimate Advantage		:=====	94.4							
Professional Write		:=====	49.1							
Q&A Write		:=====	53.1							
WordPerfect		:=====	39.2							
WordStar Professional		:=====	28.8							
XyWrite III Plus		:=====	20.6							
		:-----:								
secs				20	40	60	80	100	110	

TEST 5. MOVE PARAGRAPH - measure the time to move a paragraph from the top of a 10 page document to the bottom (using block).

Atari WP	(7th)	:*****	0.9							
		:								
DisplayWrite		:=====	1.1							
Manuscript		: = 0.1								
Word		: = 0.2								
Multimate Advantage		:=====	3.0							
Professional Write		: = 0.1								
Q&A Write		:=====	0.7							
WordPerfect		: = 0.1								
WordStar Professional		:=====	3.5							
XyWrite III Plus		:=====	0.5							
		:-----:								

secs	0.5	1.0	1.5	2.0	2.5	3.0	3.5
------	-----	-----	-----	-----	-----	-----	-----

TEST 6. SEARCH/REPLACE - measure the time to search and replace 1666
 "XXXXXX" groups with "YYYYY" groups.

Atari WP	(7th)	:***** 71.6					
		:					
DisplayWrite		:===== 47.2					
Manuscript		:===== 121.5					
Word		: Failed					
Multimate Advantage		: = 3.8					
Professional Write		:===== 454					
Q&A Write		:===== 32.4					
WordPerfect		: = 4.3					
WordStar Professional		: = 17.4					
XyWrite III Plus		: = 1.2					
		:-----:-----:-----:-----:-----					
	secs		30	60	90	120	150...

TEST 7. SAVE DOCUMENT - measure the time to save a 10 page document
 to a hard disk.

Atari WP	(last)	:***** 4.2					
		:					
DisplayWrite		:===== 2.1					
Manuscript		:===== 1.8					
Word		:===== 2.3					
Multimate Advantage		: = 0.6					
Professional Write		:===== 1.1					
Q&A Write		:===== 1.9					
WordPerfect		:===== 1.2					
WordStar Professional		:===== 1.3					
XyWrite III Plus		:===== 1.6					
		:-----:-----:-----:-----:-----					
	secs		1.0	2.0	3.0	4.0	5.0

Editor Note: Our thanks to Earl, This is a beautiful job here.....If any
 of the readers care to discuss these tests with Earl, leave him mail on
 CIS or to us and we will forward it to him.....

ATARI SCUTTLEBITS
 =====

by Bob Kelly

User Groups

It was a cold, damp night in Sunnyvale. The unusual weather had moved
 down from San Francisco, adding to the discomfort of the men sitting in
 the sumptuous living room. In one corner was Jack Tramiel, staring out
 the window as the ocean waves pounded against the beach. Sitting close
 to Tramiel, on a floor cushion not 10 feet away was Neil Harris with a
 copy of the Wall Street Journal in his lap. The headlines read "Tramiel
 buys Atari from Warner". Harris spoke rapidly in the fashion of a young
 reporter, "Gee whiz boss, we sure got some good press!" Jack Tramiel
 turned momentarily, smiled, nodded and continued looking out the window

engrossed in his thoughts. Surely his thoughts were on the risk to his fortune now that he had bought Atari? How was he going to keep this company going until the still secret 16 bit line was out next year? Everything he had worked for was at stake but nothing appeared right at the moment.

Across the room sat Sig Hartmann who had been with Jack Tramiel a long time. He was Vice President at Commodore and who knows what else where else. Sig put down his copy of Der Spiegel and said, "Jack, we're planning to cut costs as you ordered. Corporate employment will be only a few hundred people. Of course, a reduction in personnel creates other problems. Namely, who is to service the products we sell? The planned cutbacks eliminate what little customer support Warner provided to Atari owners. Further, there is no dealer network." A horrible thought flashed across Neil Harris' mind "could this mean a pay cut for me?" Jack Tramiel noting Harris' discomfiture smiled and suggested it would be nice if someone could get some sandwiches as he had not eaten since writing the check. Harris volunteered, took the order and walked out the door toward the waiting limo headed for Metropolis and the sub shop.

Back in the house, Sig was alone with Jack and son Sam Tramiel. Nothing much was said for 20 minutes or so. Suddenly an idea came to Sig. He broke the silence, "One way we can keep people buying Atari products even though we have no customer service network is to utilize the existing Atari user groups." Jack turned in his chair, dropping hot cigar ashes on his pants. Sig went on ignoring Jack's smoldering trousers, "User groups have been galvanized through opposition to policies adopted by Warner. They have repeatedly stressed the versatility and power of the 8 bit computer with the public. We must sell the 8 bit inventory inherited from Warner to stay alive. Further, by gaining their support, we can move away from just a game machine company in the public's mind."

Jack Tramiel continued to stare out the window but now thoughts raced through his mind. After about 2 minutes, he bolted from the chair dropping his cigar in his bourbon and water. He was belly to belly with Sig and shouted, "Yes, the user groups can help us sell the huge inventory of 8 bit products while Shiv has time to bring on the new 16 bit ST computer line. In fact, even after we start selling the 16 bit computers in the U.S., we can tell everyone to go to the user group for support". Jack was now into it. He turned and said to number one son, "This arrangement will reduce our financial requirement to service the products we sell while at the same time advertising how user groups are providing enhanced customer support to the new buyer. It's free except for some minimal outlay for a user group representative here at corporate headquarters. It will and must work!" Both men congratulated each other on the beauty of such a system. It was all so simple - service the public through involving the public. This was the answer to the liquidity trap. A greater share of Atari's financial resources could now be allocated to develop the next generation of 16 bit computers.

Sam Tramiel had been quiet up to this point. He looked at both men and said, "This will work for a couple of years, then it will be time to pay the piper. In other words Dad, sooner or later, the user groups may need help as our corporate policies change and we move away from the 8 bit computer. What do we do then? They will expect our support"

While the conversation above is fictitious and events compressed, the corporate plan implemented by Atari was fairly close to what has been depicted. User groups did everything in their power to aid Atari's resurgence. User groups promoted the 8 bit computer line, explained to

the public how Atari's corporate outlook had changed, and took on the task of being de facto customer representatives for Atari. After one year, inventory declined, cash flow improved, and everyone awaited the imminent arrival of the ST. In retrospect, one might say that 8 bit sales bought Atari the financial time it needed and usergroups contributed to the success of this strategy. However, with the advent of the ST computer, corporate policies indeed changed, just as Sam Tramiel might have said. Atari has all but ignored 8 bit users and for the last year or so the priority of U.S. ST purchasers has declined. Atari's focus is the European market where ST sales are strong. But in Europe, there are few old-time users who remember the early days.

The lack of attention on the part of Atari over the past year or more has taken its toll on U.S. user groups. Some have gone completely out of existence, some are just a shell, and others have witnessed a decline in numbers and/or participation. It is in Atari's interest to reverse this trend. What can Atari do? Well, there are two reoccurring themes in the responses to my queries of user group representatives:

Atari could make user groups the initial beneficiary of insider information on new product releases, bug fixes, and general hardware/software support. This could be accomplished through bulletins and technical fact sheets made available to the designated officer of a user group. Another suggestion would be for Atari to provide technical summaries of GENIE files concerning important hardware/software modifications. Simply put, consistent communications creates a rationale for a user group - the transmittal of technical and product information to users.

Atari could develop a road show. Thousands turn out in selected cities when Apple technical types visit to show-off the new wares to the users in the provinces. Why can't Atari schedule 1 or 2 people for "a-month-on-the-road" each year with user groups demonstrating new hardware/software as well as third party contributions. This might be much more cost effective in the long run than appearances at various Atarifests.

One of the persons I asked for suggestions was the President of the Northern Virginia Atari Users Group, Georgia Weatherhead. While she was writing a response to my questions, the mailman deposited at her door a new Atari publication to be issued monthly. (This really happened, one day prior to submission of this column!) She immediately called Atari and found out that one copy will be distributed to each user group and the person responsible at Atari is Ms. Elizabeth Shook. The publication is located within the new computer division at Atari and Chuck Babbitt was its President. The initial issue is concerned solely with 16 bit computer information. I hope this publication will also recognize the needs of the Atari, non-games, 8 bit community. A substantial portion of the membership in the Washington, D.C. area operates 8 bit machines. In any event, assuming this new publication continues and the content is expanded incorporating more technical information, it will help user groups lure back old members as well as the needed new blood. Ultimate success depends on word being spread on club events to local Atari dealers, user group members actively recruiting, and even in some cases innovative publicity. After the shake down period for the Atari newsletter, the ball is in the user's group court. They better get ready. THIS IS AN EXCELLENT START BY ATARI. Congratulations.

Most of the users felt strongly the "travelling road show" would be of immense value. This statement is qualified, of course, by the assumption

that adequate local publicity precedes any visit by Atari officials. The road show has a number of advantages. It demonstrates to existing members the concern of corporate Atari. It has the potential for significant, immediate increments to user group membership rolls. It generates local media publicity favorable to Atari and, by implication, shows its concern for users to potential computer buyers.

D-RAMS..more on the way?
=====

The meager supply of Japanese semiconductors is unlikely to satisfy the brisk demand this year despite plans to increase production, the Ministry of International Trade and Industry (MITI) forecast Thursday.

The MITI said production of 256-k (D-RAM) semiconductor chips would level off at around 150 m pcs. in each of the last two quarters of this year. Comparison figures for the first six months of this year and the last two quarters of 1987 were not available.

Overseas chip manufacturers plan to increase their production of one mb D-RAMs, which have four times the memory of the 256-k chips, to 52 million units in the third quarter of the year, up 32 percent on the corresponding period last year.

This will increase to 71.3 m chips in the last quarter, up 35 percent. Demand for D-Ram chips for use in personal computers, office equipment and non-military electronic devices has been overrunning production and is likely to remain at about 10 - 15 % above supply for the rest of the year they said.

X*PRESS X*Change Information Services
=====

BY Alan Page

Many of us talk about getting stocks, news, sports, weather and business information online, but few of us do. The reality is that it just costs too much. With hourly charges running from \$5 to \$18 and more you would pay a fortune to get the same amount of information that you could get in a daily newspaper. But X*PRESS Information Services Ltd. is changing all that.

I am proud to announce the availability of Atari ST software for X*PRESS Executive and X*PRESS X*Change information services.

X*PRESS offers two electronic information services delivered by cable television lines to your computer: X*PRESS EXECUTIVE and X*PRESS X*CHANGE. The services travel one-way at high speed (9600 baud) and are captured by your ST software in information categories you've selected. A small data receiver connects to your cable TV hookup and converts the X*PRESS signal into serial data which feeds directly into your ST, using the built-in

serial port. The information you receive is live, right off the satellites and other data transmission links, so it is the most current available. You gain the advantage of 24-hour, unlimited information with low-cost, reliable cable delivery.

X*PRESS Executive is a premium business and financial information service. It offers customized, continuously-updated stock quotes from all major U.S and Canadian exchanges, plus extensive business and financial news from Standard & Poor's, McGraw-Hill and Business Week magazine. Hundreds of press releases from Business Wire and PR Newswire keep you on top of corporate developments each business day. You also get market statistics and commentaries, interest and exchange rates, metals, money market, commodities and mutual fund updates. For only \$19.95/month you have unlimited usage of Executive. As a bonus, you also gain access to the basic X*Change service at no additional cost.

X*PRESS X*Change is a comprehensive, consumer-oriented information service, available from your cable company as part of your basic service -- which means NO EXTRA MONTHLY FEE. With X*Change you get personalized stock quotes updated three times daily -- at market open, midday and close. Think of it -- FREE stock quotes from Standard & Poor's. There's no better bargain for investors.

A remarkable range of national and international news from major world news wires, such as AP, Canadian Press, Agence France Presse, TASS, Xinhua (China), Kyodo (Japan), Deutsche Presse-Agentur, and OPECNA give you a true global perspective. All news services are in English, except NOTIMEX, from Mexico, which is in Spanish.

If you want sports news, X*Change has got it for all major pro sports - schedules, standings, line-ups, features -- even scores of games in progress -- from baseball to soccer.

Weather reports and forecasts -- from international and national to detailed state conditions are updated all day, every day in X*Changes. You also get editorials from some of the nation's leading syndicated columnists, lifestyles, and entertainment news, including tv listings and soap opera updates, Special shopping offerings tune you in to some great bargains.

The Tech Talk category in X*Change gives you Microbytes from BYTE Magazine and featured threads on using hardware and software from Best of Bix (BYTE Information Exchange). One-way conferencing in Information X*Change lets you participate in moderated conferences on a host of timely topics -- from computers to the environment.

No modem. No phone charges. No connect-time fees. Sounds impossible, doesn't it? But, there's no catch. The secret is economical cable delivery.

Your X*PRESS ST software allows you to select the categories in which you want to capture stories, which are stored in RAM from you to view, print out for reference, or write to disk. And at 9600 baud, it doesn't take long. You get only the information you want.

The ST software also has an exclusive 'clipping folder' feature which lets you gather stories that you're particularly interested in. You can specify keywords, individually and in pairs, and the software will scan ALL incoming stories, whether you have selected the category or not, and grab any that have your keywords. A separate keyword search will scan all

stories in memory for up to eight selected keywords. It's a great time-saver and inexpensive research utility.

Best of all, your X*PRESS Atari ST software also allows you to run another program from within the X*PRESS program and X*Change or Executive will continue to work in the background collecting stories and stock quotes.

So what's the bottom line? An X*PRESS Executive kit costs \$225 along with the \$19.95 monthly subscription for unlimited use. An X*Change kit costs \$125 and there is NO monthly fee. Each kit contains software, receiver, connection cables and easy-to-follow installation information. And SATISFACTION IS GUARANTEED for Executive and X*Change. If, for any reason, you're not completely satisfied, return the kit within thirty days for a full refund. X*PRESS services are also available to owners of home earth stations.

Call toll-free 1-800-7PC-NEWS today to order your Executive or X*Change kit. So, whatever your information needs -- from investing to just staying informed -- there is no better information value than X*PRESS.

Alan Page
Atari ST software developer
X*PRESS Information Services, Ltd.

TOS Error & BOMB Codes
=====

Originally written by Darryl May
John Townsend of Atari posted this on GENie to provide some answers.

The following is an official list of the errors that can appear while you are operating your ST computer.

-> This first list gives you the GEM error messages:

Error description	GEM Error code
=====	=====
OK (no error).....	0
Fundamental error.....	1
Drive not ready.....	2
Unknown command.....	3
CRC error.....	4
Bad request.....	5
Seek error.....	6
Unknown media.....	7
Sector not found.....	8
No paper.....	9
Write fault.....	10
Read fault.....	11
General error.....	12
Write protect.....	13
Media change.....	14
Unknown device.....	15
Bad sectors on format.....	16
Insert other disk.....	17

Invalid function number.....	32
File not found.....	33
Path not found.....	34
No handles left.....	35
Access denied.....	36
Invalid handle.....	37
Insufficient memory.....	39
Invalid memory block address....	40
Invalid drive specified.....	46
No more files.....	49
Range error.....	64
Internal error.....	65
Invalid program load format.....	66

-> Those bombs that appear on your screen are error messages from the 68000 micro-processor.

Description	Number of bombs
=====	
Reset: Initial PC2.....	1
Bus Error.....	2
Address Error.....	3
Illegal Instruction.....	4
Zero Divide.....	5
CHK Instruction.....	6
TRAPV Instruction.....	7
Privilege Violation.....	8
Trace.....	9
Line 1010 Emulator.....	10
Line 1111 Emulator.....	11
[unassigned, reserved].....	12
[unassigned, reserved].....	13
Format Error.....	14
Uninitialized Interrupt Vector..	15
[unassigned, reserved].....	16-23
Spurious Interrupt.....	24
Level 1 Interrupt Autovector....	25
Level 2 Interrupt Autovector....	26
Level 3 Interrupt Autovector....	27
Level 4 Interrupt Autovector....	28
Level 5 Interrupt Autovector....	29
Level 6 Interrupt Autovector....	30
Level 7 Interrupt Autovector....	31
Trap Instruction Vectors.....	32-47
[unassigned, reserved].....	48-63
User Interrupt Vectors.....	64-255